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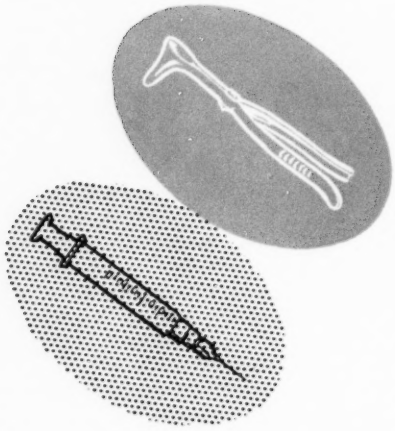

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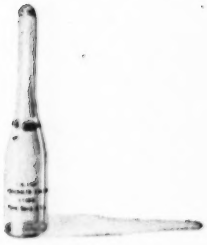

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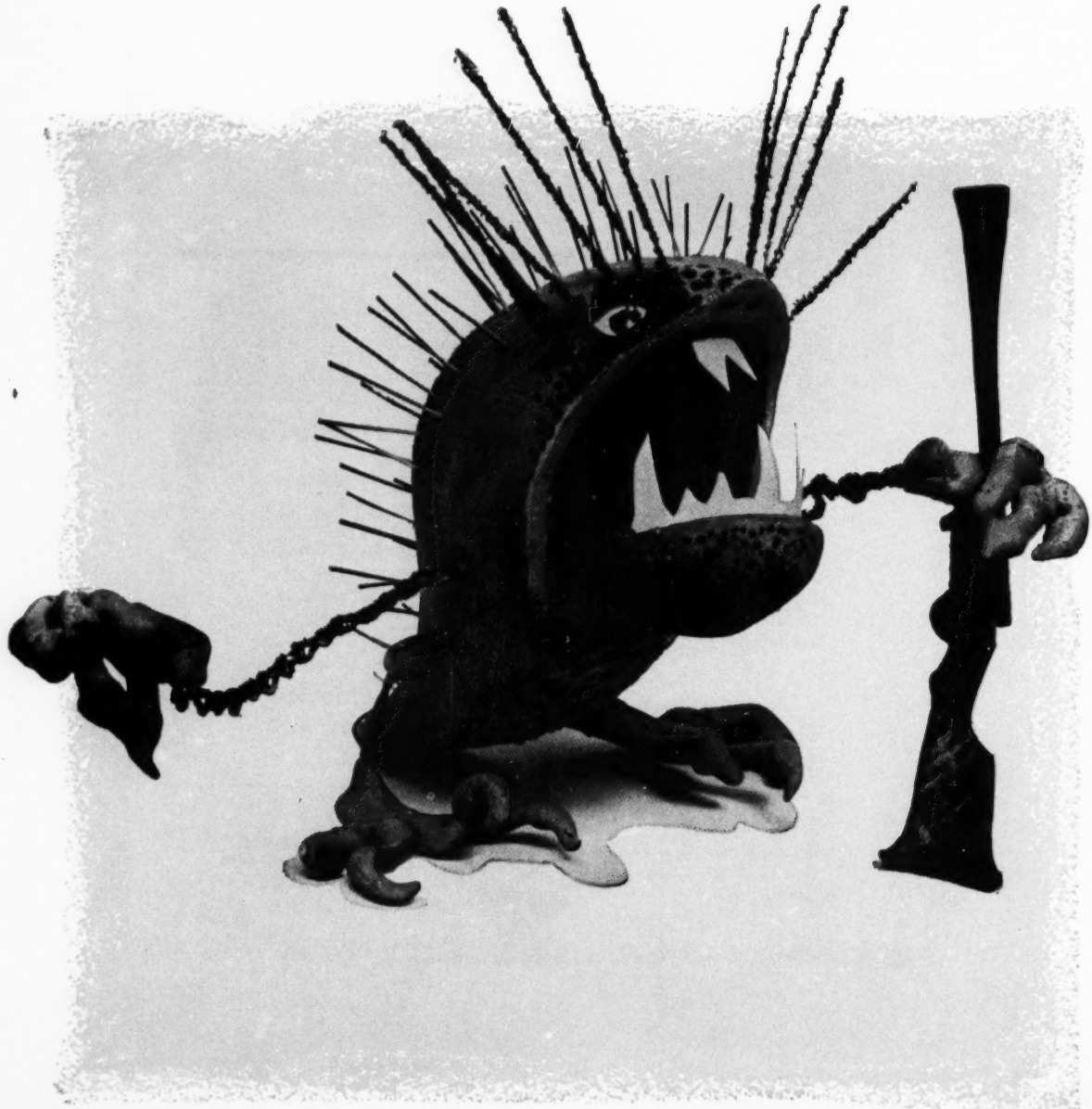

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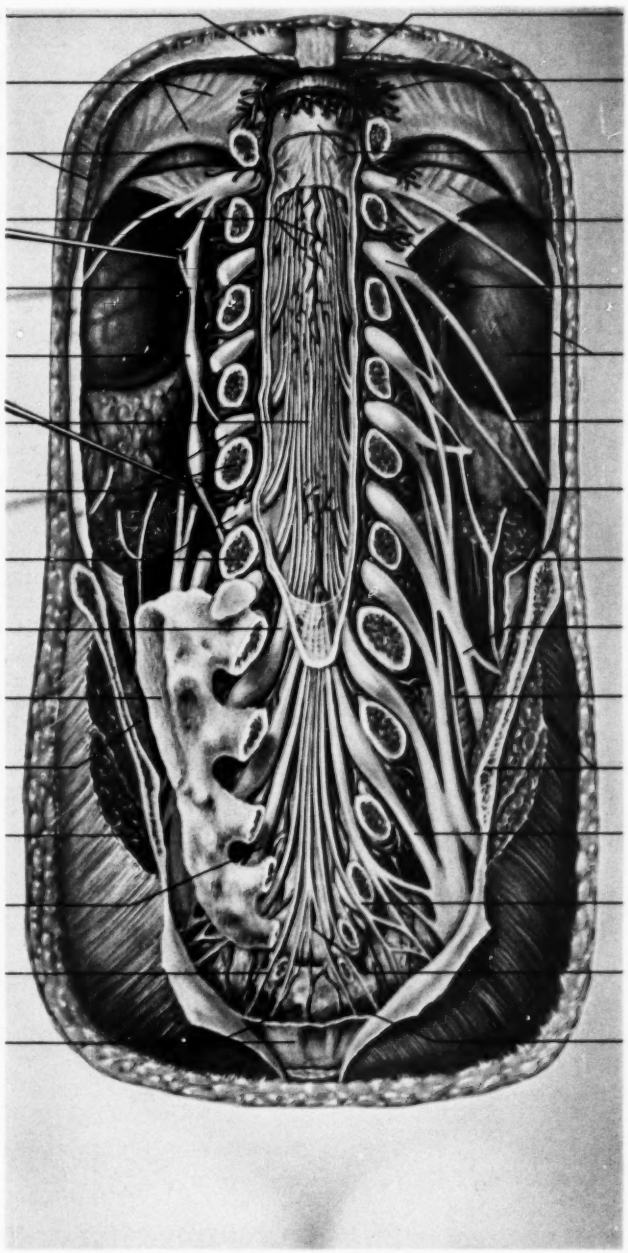

This is one of a series of paintings for Lederle by Paul Peck, illustrating the anatomy of various organs and tissues of the body which are frequently attacked by infection, where aureomycin may prove useful.

Lederle

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THE PRESENT STATUS OF THE MANAGEMENT OF URINARY INFECTIONS*

THEODORE R. FETTER, M. D.,**
Philadelphia, Pa.

Infection is the most common lesion of the genito-urinary tract. It ranks second in occurrence to respiratory infection. The frequency of infection of the urinary organs may indeed account for a certain lack of appreciation of its potential danger in the maintenance of renal health. It is interesting to note that infection of the urinary tract has responded to many of the recently developed antibacterial agents. Modern chemotherapy and the antibiotics have completely changed the pathologic processes in the urinary tract. It is necessary to repeat in any presentation of the management of urinary infections that definite fundamental principles must be borne in mind. Failures are the result of the indiscriminate use of the antibacterial agents. A complete lack of understanding of their effectiveness is frequently demonstrated by a total disregard of fundamental urologic practice. It is now nearly 20 years since the first clinical work on the sulfonamides was done. For more than a decade thereafter, the various sulfonamides monopolized the chemotherapeutic field. The antibiotic era was then initiated by the clinical application of penicillin by Chain and Florey following the previous laboratory discovery of its activity by Fleming. Streptomycin was then discovered by S. Waksman in 1943. There is no doubt that streptomycin has profoundly altered the course of many cases of tuberculosis. Three antibiotics—all derived from species of streptomyces—have been designated as broad spectrum antibiotics: aureomycin, chloramphenicol and terramycin. It is essential that a working knowledge of these antibacterial agents in the management of infections be developed by the physicians. Their response to various organisms, the side reactions, the problem of adequate dosage, combinations of antibiotics, drug resistant infections, all constitute a problem that must be understood by the physician. As far as urinary infections are concerned, clinical experience has sufficiently developed to point out certain advantages of the use of one drug in preference to another.

One of the greatest difficulties in the treatment of urinary infections is the lack of application of sound clinical practice. The need for a complete medical history and physical examination, including a rectal and vaginal examination, is of paramount importance. Certain laboratory data is obviously necessary. These observations should determine the presence of: (1) acute or chronic infections; (2) obstruction within the urinary tract; (3) renal function: organic renal disease; (4) urine studies: type of organism; (5) sensitivity studies of the infecting organism; (6) focus of infection outside the urinary tract.

There are many cases of infection of the urinary tract which do not manifest any symptoms except a pyuria. On the other hand, cases of acute infection reveal themselves by severe general symptoms with accompanying grades of severity of local urinary disturbances. The patients are very ill as a result of overwhelming renal toxemia. The most important single factor in the treatment is the administration of fluids, followed by the injection of penicillin since the majority of acute hematogenous infections of the kidney are coccal in type and respond to penicillin rather promptly. As treatment progresses one of the broad spectrum antibiotics should be given, preferably aureomycin. One must now be prepared to investigate further and decide whether or not obstruction within the urinary tract may be responsible for the acute infectious process.

*Read before the Medical Society of Delaware, Rehoboth, September 9, 1952.

**Professor of Urology, Jefferson Medical College.

If the acute episode is the result of a chronic urinary infection, obstruction is probably the historical background of the infection. Relief will not be permanent until the obstruction is eradicated. Clinically we have observed cases where the obstruction was relieved and the infection persisted. Cases of this kind need special studies with particular attention to the infective organism and its sensitivity to the various antibacterial agents. These cases invariably present some degree of renal impairment of function, and consequently the effectiveness of chemotherapy is limited.

In acute hematogenous infections of the kidney the pathologic process is disseminated throughout the parenchyma of the kidney. The source of infection may be outside of the urinary tract. Skin infections or respiratory lesions are the most common sources. The organism is usually staphylococcus and less frequently streptococcus. In acute bacillary infections of the kidney the source is generally within the urinary tract—due to obstructive uropathy—or the intestinal tract. The colon group of organisms are the most common in the urinary tract and respond readily to chemotherapy if no obstruction exists. The resistant bacillary infections are due mainly to B. proteus vulgaris and Ps. aeruginosa, exclusive, of course, of tubercle bacilli.

It is evident that in order to obtain maximum results of chemotherapy and the antibiotics in the treatment of urinary infections adequate function of the kidneys is essential. The corallary of this principle is that free drainage of urine must exist. Obstruction within or without the urinary tract must be corrected. Urolithiasis and infection are difficult to manage unless the calculi are removed, although symptomatic or temporary relief may be obtained in the presence of stone. Renal drainage as a result of repeated and continued bacterial invasion leads to serious consequences. Renal azotemia is often the result of repeated episodes of pyelonephritis. Therefore an estimation of renal function must be determined either by urine study or blood retention tests. One may obtain a fairly good impression of renal capacity by carefully checking the urine output. In the home, the physician must instruct one of the attendants to keep a record of total urine output. Thus, in prescribing any antibacterial agents one may be assured of a satisfactory response of the medication in relation to renal capacity.

It is important to insist upon a properly collected specimen of urine. It is essential to have a knowledge of the bacteriologic variants and their response to selective chemotherapeutic and antibiotic agents. In the female the urine must be obtained by catheterization. The male patient can be requested to void in clean containers; if culture is desired the receptacles must be sterile. With infants and children a little patience and ingenuity will often be rewarded with a "clean" specimen of urine. The mother must frequently be instructed in the methods of urine collection. Following the collection of urine one is able to determine what type organisms are present by staining the urinary sediments either with methylene blue and/or the gram stain. The majority of infections are bacillary and usually respond promptly to sulfonamides and/or the antibiotics, but it frequently happens that many organisms develop a resistance to medication. For this reason it is well to study the infected urine from the standpoint of bacterial sensitivity to the various chemotherapeutic agents. In the long run this proves not only economical but the percentage of failures is diminished.

It is imperative that one have an idea of the causative factor of urinary infections. If complete investigation of the urinary tract reveals no obvious reason for the occurrence of infection, the influence of distant foci should not be overlooked. This is true for both acute and chronic infections. Tuberculosis must always be borne in mind. In many instances acute urinary infections will subside without any specific therapy except the usual general remedial measures such as good nursing, adequate fluid intake and proper bowel elimination. In viral infections it is not uncommon to have an acute urinary episode of sudden hematuria followed within 24 to 48 hours with pyuria and marked disturbances of urination. Organisms are not obtained in the stained urinary sediment. In these cases, cystoscopy reveals a simple hemorrhagic cystitis. The culture of the urine may or may not be positive for a strep-

tococcus hemolyticus strain. Penicillin and/or aureomycin benefit these patients promptly and within 7 or 10 days the lesion in the bladder has disappeared.

It is the recurrent, acute infectious episode which should give rise to caution and the physician should then insist that a complete urological study be made. The common occurrence of anatomic variations of the urinary tract cannot be over-emphasized. This should be particularly noted in the management of urinary infections of infants and young children. Extravulvar and genital lesions are frequently responsible for recurrent urethritis in children. A small pin point urethral meatus if recognized and treated will lead to prompt relief of infection. The mothers of these children must be instructed to observe the rules of hygiene and cleanliness. A child may have one or more obstructive lesions in addition to any anatomic variant, so that cystoscopy is nearly always indicated if we are to make any progress in the management of urologic disease in children.

In adults the same problem presents itself but diagnostic investigation is not necessarily delayed unless the patient refuses to cooperate with his physician. In many cases the urinary infections will persist despite removal of obstructive lesions and furthermore, the usual antibacterial drugs do not seem to influence the course of the chronic infection. These cases are difficult and require every effort to remove any possible foci of infection within or without the urinary tract. Adnexal disease and urethral lesions in both male and female are very common causes of persistent chronicity of urinary infection.

In pregnancy urinary infections are not uncommon. It is important to know whether there is any precedent urologic disease. It is necessary to obtain data on renal function. The majority of infections during pregnancy respond to the broad spectrum antibiotics. If failures are evident additional data may be sought by an intravenous urogram. Cystoscopy and ureteral catheterization is generally not necessary unless the infection progresses to the point where the pregnancy is threatened by progressive renal toxemia.

The Problem of Dosage

The development of present-day chemotherapy is familiar to physicians but less so are the changes in approach to the problem of adequate dosage. It has been recognized since the sulfonamide era that large doses of the drugs were not necessary in the majority of cases of urinary infection. In acute staphylococcic and streptococcic infections of the kidney it is important to give an adequate amount of the drug to secure prompt and maximal antibacterial effect. This may be given intravenously in conjunction with fluids. The response depends entirely upon adequate renal capacity. For this reason it is better to obtain adequate fluid interchange before "loading" the kidney with high dosage of the antibacterial drug. In the sulfonamide era it was not uncommon to note crystalization of the drug and the clinical phenomenon of "lower nephron necrosis." So thoroughly was the idea of a "large or loading" initial dose inculcated into the medical mind during the era of sulfonamides that the same principles were observed with penicillin and later with aureomycin. It is a clinical fact that the majority of urinary infections will respond to the usual ordinary dosage regime. The number of complications and side effects of the sulfonamides is now recognized. The reactions following large dosages of penicillin initially are comparatively few and in certain types of cases, probably this initial loading dose serves a very beneficial safeguard. In acute suppurative infections of the kidney this is correct.

Following the introduction of the broad spectrum antibiotics (aureomycin, chloramphenicol, terramycin) it became apparent that different methods of dosage must be used. Unfortunately this has not received wide acceptance by the medical profession as a whole. They persist in prescribing an initial dose of double the ordinary dose for a period of 24 hours. Clinical and laboratory investigators have been reporting that a large single dose of the broad spectrum antibiotics is not completely absorbed when given by mouth. Considerable loss of the antibiotic occurs by fecal excretion. The incidence of side reactions is in direct proportion to the size of the dose and the amount of unabsorbed antibiotic. It is generally true that one prefers to administer enough of the antibiotic rather than less—despite the fact that a large proportion of the medication may be lost by the inability of the intestinal mucosa to absorb the antibiotic. It

is a safe method to follow the normal dosage regime to insure sufficient antibacterial activity. It is well to continue the antibiotic for a short period of time after the urine becomes sterile. If results are not obtained in 7 or 10 days of continuous medication further investigation is obviously indicated.

Penicillin — Penicillin continues to be the antibiotic of choice for treatment of all gram-positive bacterial infections including staphyloccocci, pneumococci, hemolytic and nonhemolytic streptococci infections. In addition it is the most effective drug for the treatment of gonorrhea and syphilis. In dealing with penicillin-resistant staphylococci infections, the broad spectrum antibiotics are indicated, preferably aureomycin, which generally inhibits the organisms. There is considerable variation in resistance to the different antibiotics among various strains of staphylococci so it is necessary to test the sensitivity of those failing to respond to penicillin.

Penicillin-resistant gonococci are best treated by the broad spectrum antibiotics. Aureomycin, 250 mgs., 4 doses in 24 hours is usually sufficient. It is advisable to continue half dosage, 500 mgs. daily for 2 or 3 days. It is necessary to check the patient at weekly intervals to note any evidence of recurrence of the infection.

Streptomycin and dihydrostreptomycin. The most important fields of application for streptomycin and dihydrostreptomycin are in the treatment of tuberculosis and the gram-negative bacillary infections such as aerobacter aerogenes, escherichia coli and proteus vulgaris. When either form is used for the treatment of urogenital tuberculosis it should be combined with para-amino-salicylic acid, since this procedure increases the period during which treatment may be continued before bacterial resistance develops. One gram of dihydrostreptomycin per day by injection combined with 12 grams of para-amino-salicylic acid by mouth for one year is advised for genitourinary tuberculosis. This form of treatment is the only available method today in bilateral renal tuberculosis. In unilateral renal tuberculosis or in genital tuberculosis it is recommended that dihydrostreptomycin and para-amino-salicylic acid be prescribed for a long interval of time. In cases of involvement of the bladder where unilateral nephro-ureterectomy was done, local symptoms and the pyuria are relieved if this combination of therapy is used.

The effect of isonicotinic acid hydrazide on genito-urinary tuberculosis is not well known at the present writing. Several patients in our Clinic are now on clinical trial with this drug. I am not prepared to say that it is very helpful. In one case there was marked symptomatic improvement with a decrease of urinary frequency, a sense of well-being and a tendency to a clearer urine. The improved sense of well-being appeared in all five of our cases and was attributed to the fact that a new drug was under observation.

In mixed infections of the urinary tract penicillin and streptomycin are given in combination. Good results have been observed and it is advisable to continue this form of treatment if obstructive states and tuberculosis have been ruled out.

Colon infections of the prostate respond readily to streptomycin therapy. The combined use of penicillin and streptomycin are preferred in this type of prostatic infection. Their use in pre and postoperative treatment in prostatic operations is routine at present. Resistant strains of organisms are less likely to develop if the urine is strongly alkaline.

Aureomycin—Aureomycin has proved effective in our Clinic for infections that have developed resistance to other antibiotics. There are many who consider aureomycin the best remedy for general use in most urologic infections exclusive of gonorrhea and tuberculosis. In penicillin-resistant gonococcal infections, aureomycin is the drug of choice. Frequently a single daily dose of 500 mgs. will eradicate the gonococcus. In prostatic infections, particularly the nonspecific variety, aureomycin is preferable to any antibiotic. This is also true in nonspecific urethritis where aureomycin is very effective. A distinct advantage in the use of aureomycin is that its activity is increased in an acid medicine, rendering it more useful in the majority of these infections than streptomycin. The side reactions of aureomycin are generally of the gastro-intestinal variety and may be prevented if the drug is combined with milk. In known allergic patients, aureomycin produces side reactions early but they are comparatively mild in character and the medication

can be continued unless nausea and diarrhea become progressively worse.

Aureomycin is used prophylactically by mouth to prevent urinary infection when catheterization of urethral dilatation is necessary. The incidence of reactions of chills and fever following urethral instrumentation has been remarkably reduced.

Its use following prostatic operations, particularly transurethral operative procedures has been found an invaluable aid in the postoperative management of these cases. The urine tends to clear rapidly and eventually becomes sterile. At the present time aureomycin is far superior to any of the broad spectrum antibiotics in routine urologic practice. In penicillin-streptomycin-resistant cases, aureomycin should be tried promptly.

Terramycin. Terramycin is effective against the common invading organisms in urinary infections and has as wide a range of action as other antibiotics. It is relatively untoxic except for side relations of the gastrointestinal variety. Discontinuance of the drug clears up the side reactions promptly. It is used interchangeably with aureomycin if the latter does not produce effectiveness in eradicating the urinary infection. In several instances in my practice, terramycin produced a sterile urine which proved resistant to penicillin, streptomycin, aureomycin and the sulfonamides. The behavior of drug resistant infections in very interesting. That is to say, some strains of bacteria are naturally resistant to the antibiotic; others are sensitive. From a clinical standpoint, when a new antibiotic becomes available for clinical investigation, definite differences in sensitivity among the various strains of susceptible species of bacteria are noted. Terramycin is a valuable broad spectrum antibiotic with little evidence of toxicity.

Chloramphenicol. Chloramphenicol (chloromycetin) is very effective against the gram-negative bacillary infections. It will produce a sterile urine promptly in many cases where other antibiotics have failed. The dosage regime is the same as aureomycin and terramycin. Its prolonged use must be discouraged unless adequate blood studies are made at intervals. It must be recognized that in many instances of urinary infections a gradual diminuation of red blood cells occurs; unless this is appreciated a patient may develop a marked secondary anemia which may prove disastrous. This is particularly true in chronic urinary infections and the acute hematogenous variety. It is well therefore not only to treat the urinary infections but any possible complicating factors as a result of the infection. Anemia is invariably present or follows urinary infection. Chloromycetin has produced aplastic anemia as a result of its prolonged and intermittent use. A recent ruling by the Food and Drug Administration states that the package of chloromycetin must carry warnings relative to its use and that it can be obtained only on a physician's prescription. It is obvious that all antibacterial drugs should be obtained only on a doctor's prescription. The indiscriminate use of any such drugs may well produce blood and tissue changes which are potential health hazards.

Polymyxin. Polymyxin (aerosporin sulfate) is very active against gram-negative organisms. It is produced by bacillus polymyxa. When all other agents fail, polymyxin will frequently be successful in eradicating the pseudomonas and the coli-aerogenes groups of organisms. Its importance lies in the fact that contrary to aureomycin, chloromycetin and terramycin it is effective in pseudomonas infections. Pulaski J. Urol 62:564 Oct. 1949 states that drug-fast bacteria were not produced by treatment with polymyxin. Nephrotoxicity and neurotoxicity are likely to be produced by polymyxin, according to some clinical reports. Jawetz (Arch. Int. Med. 89:90 (Jan.) 1952) states that his studies with polymyxin-B indicated no serious nephrotoxicity and all neurotoxic symptoms disappeared within 24 to 48 hours after discontinuance of polymyxin-B injections.

Our experience with polymyxin lies in the field of its local application in combination with bacitricin (aerosporin-B) to infected incisions, and sinus tracts; also in plastic procedures on the penis as a prophylactic agent. It has proved highly beneficial and healing is undoubtedly facilitated.

Sulfonamides. The sulfonamides remain valuable urinary antiseptics. The newer drugs on the market represent relatively low toxicity. Sulfisoxazole (gantrisin) is one of the sulfonamides which is used continuously in our Clinic. It is relatively cheap and in many

cases sufficient to obtain satisfactory clinical results. It is effective in the treatment of escherichia coli infections. It may be given in combination with penicillin. The average dosage pattern is 0.5 gm. every 4 or 6 hours for a period of 10-14 days. It has a wide antibacterial spectrum and its toxicity is not necessarily a problem in routine office practice. No sulfonamide should be given over a prolonged period unless the patient is followed routinely and frequent blood counts made.

Methenamine Methenamine (urotropin) continues to be a very useful drug, particularly in the treatment of gram-negative bacillary infections. In routine office practice I use mandelamine (mandelic acid and methenamine). This drug is very effective in postoperative management of transurethral prostatectomy. The dosage of 1 gm. of mandelamine 3 or 4 times daily for 10 to 14 days is adequate and the results are very satisfying. It is not as expensive as the antibiotics and may be given over a long period of time without deleterious effects. It is also very effective in recurrent low grade infections of the bladder in women.

Pyridium. Pyridium must be included in a discussion of urinary antiseptics. It enjoys a wide popularity. It is probably the most common urinary antiseptic because it is relatively nontoxic and the physician does not need to be concerned with the side effects of the sulfonamides, or the relative sensitivity of the antibiotics. Pyridium has a soothing effect on the mucosa of the urinary tract and the acute symptoms of burning on urination, frequency of urination, and dysuria are diminished. Psychologically the patients possibly derive some benefit from its use because of the beautifully tinted orange color of the urine. Two or three tablets of pyridium three times a day usually are suffiicient to produce a therapeutic effect. It apparently is common procedure, in office practice, to give a single injection of penicillin of 300,000 units and maintain oral medication with pyridium until the next visit of the patient. This may be good therapeusis if the infection of the urine is chiefly due to a coccus; otherwise the penicillin is wasted. The rapidity of therapeutic response in any urinary infection depends upon a proper urine study.

Arsenicals. The value of arseno therapy in the treatment of a bacterial pyuria or "sterile pyuria" is well recognized. Oxophenarsine (mapharsin) in increasing dosage every four days for a total of 6 or 7 injections (0.3 gm. - 45 gm. - 0.6 gm.) 2 injections each, is given. The results are dramatic. The sulfonamides and the antibiotics seem to have no effect on the urine. The relationship of abacterial pyuria to Reiters syndrome—a nonspecific urethritis conjunctivitis and arthritis —remains unsettled. The smears and cultures of the urine fail to reveal any organisms. The response to arseno therapy is considered specific only when all other treatment has failed, when arsenicals produce an immediate effect and when complete eradication of all signs and symptoms is the end result.

In resistant staphylococcic pyurias to antibioties, arseno therapy is frequently employed. Mapharsen in dosage of .45 gm. to 0.6 gm. is given at intervals of 4 days for 5 to 7 injections.

SUMMARY

The fundamental principle of urologic practice is that an adequate and free urinary passageway must be obtained before optimum results may be expected from chemotherapy and antibioties in the treatment of urinary tract infections.

Renal function must be adequate in order that a sufficient amount or concentration of the antibacterial agent may be delivered to the site of the infection.

The study of the urine must be such that the infective organism is known and on the basis of sensitivity and susceptibility of the bacterial species the proper antibacterial agent is selected. The problem of dosage of any of the agents must be familiar to the physician for effectiveness.

The success or failure in the treatment of urinary tract infections depends upon the application of sound clinical practice in each case.

255 S. 17th Street

DISCUSSION

DR. N. L. CANNON (Wilmington): In addition to the enjoyment we have shared listening to Dr. Fetter's splendid presentation I

have had the increased benefit of leisurely reading his paper in its entirety.

I cannot recall having read a better, more concise yet comprehensive analysis of the modern aspects of the treatment of urinary tract infections.

I should like briefly to reiterate and re-emphasize three salient points. In the first place any patient with a urinary infection deserves the most exacting, detailed and scrupulous study from a general medical point of view.

For not only are many urinary infections secondary to extra urinary foci but in primary infections due to some obstructive lesion there are also clues to the diagnosis which can be found in a careful clinical examination.

Secondly; a careful urologic study should include a search for obstructive lesions—none are too minor to be casually dismissed, a complete renal function study as well as urine cultures with sensitivity determinations to serve as a basis for specific antibacterial therapy. And thirdly, the urologist can best cooperate with the general practitioner in the management of these infections by knowing the scope of this growing therapeutic armementarium so that he can utilize the available drugs properly, fully, and effectively. By so doing we can minimize the seriousness and potential progressive damage which chronic, recurrent urinary infections can have upon the kidneys, the bladder and upon the patient's health as a whole.

And when the organism proves resistant to all the available antibiotics in vitro we have to remember basic principles of promoting free urinary drainage, surgical principles, and general medical supportive measures as well as continuous and patient checking of all possible reasons for an apparent failure. The number of patients who are not cured is growing steadily fewer, thanks to the combined strength of our therapeutic and diagnostic facilities.

If the past twenty years is any indication of change, I can't help feeling that the next twenty will carry us again as far along in the triumph over our bacterial enemies in the urinary tract.

I was interested about the fellow assigned to the pediatric wards of the hospital looking mainly for urinary infection in children. I have seen two children where the urinary tract was not thought of, and both the children, under two years of age, were allowed to progress to a point where bilateral nephrostomies had to be done. There was bladder obstruction in both cases and if recognized early enough could have been treated for what they were without progressive damage to bladder, uterus and kidneys, and it is questionable whether the results from the surgery that was done will at any time allow of any appreciable recovery of the urinary tract to permit the children to grow up to a healthy adulthood. So I think increased suspicion should be pointed to anomalies, or unexplained recurrent infections, and children should be checked cystoscopically, no matter how young they may be. We have small cystoscopes.

Since I have been in the profession I still carry on ald axiom. I am not going to discuss his paper, because it is too well-prepared. I am only here to emphasize a few points that he has already made.

A perfectly adequate history plays a very important part in our diagnosis of any malady, as the old axiom still stands good—Find the cause, remove it, and you have a cure. So it holds, today.

I am very glad he went as far back as the sulfa drugs. I remember the drug when it first came out—particularly sulfonamid. We thought we had a cure for a lot of things that we didn't have a cure for before. But the continued use of it sometimes brought bad results, such as skin irritations, etc., and in spite of the fact we got dramatic results from the use of the drugs, we still had things to contend with. I remember the first time I used it in the case of scarlet fever. In less than 24 hours the lesions were entirely gone, which, naturally, with the history and background of the drug made me think the disease was cured. I stopped it, only to have the disease appear again within 24 hours. That led me to believe that was not the whole answer.

Consequently, I am going to emphasize here the maintenance of the use of a drug until such time that you think that the disease is done away with. The same history presented itself when we first had penicillin. I remember the time when penicillin had advanced greatly among the antibiotic drugs when the drug

only lasted two hours and fifty-eight minutes in the body. It was promptly eliminated through the bowels or kidneys, but penicillin has developed to such an extent that today the manufacturers and research workers have advanced the physiological action of penicillin from two hours and fifty-eight minutes to almost two weeks.

The bacteriological studies of these things are very important. I am only emphasizing them. Dr. Fetter made these things look so easy that they seemed almost elementary. They are not elementary, of course; they are very important from every phase, from the attic to the cellar.

Why is it that sometimes the bacteria concerned develop a certain protective power against a drug that we may use? He put that in a different fashion. That is one of the things that even today in the case of penicillin is true. When penicillin started to be used for leuitic conditions, all the best authorities claimed that 600,000 units of penicillin was adequate to cure any such condition in ten injections. Today we find out that it is not adequate. We have to go further than that. Fifteen or twenty almost give us the answer.

And one more question. Why is it the bacteria do develop a certain defensive mechanism under the antibioties today as much as they had at first? Or with the antibioties we have today as much as the ones we had at first?

DR. FETTER: I appreciate your discussion of this subject. I have very little to add to what was stated, more or less along general lines, in my remarks. However, it is well to remember that some of the older urinary antiseptics are still worthwhile in certain types of infections. As time has gone on the toxic effects of the sulfonamides have gradually diminished. They are extremely popular today because of economy. In regard to the management of gonorrheal infections, penicillin is the drug of choice. In chronic urethral discharge which reveals gram-negative intracellular diplococci, aureomycin has been reported to be of tremendous value.

SCROTAL DIVERTICULUM OF THE URINARY BLADDER

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Scardino and Upson, state that "the urinary bladder is not infrequently encountered in herniotomy" (1-3% of all inguinal hernias); and that "the occurrence of a bladder diverticulum in association with an inguinal hernia is an uncommon surgical experience and one which requires the combined efforts of the general surgeon and urologist." There are three types of scrotal bladder hernias: (1.) intraperitoneal; (2.) extra-peritoneal; (3.) paraperitoneal.

In reviewing the literature, they found a single recent American report of scrotal cystocele where the author[2] reported two personal cases and found 30 others (scrotal bladder hernia) in the foreign literature, some of which were thought to be diverticula.

In talking with local surgeons, I find that most of them have encountered a structure during inguinal herniorrhaphy which has been found to be urinary bladder, the finding usually coming as a surprise, the diagnosis not having been made preoperatively.

Diagnosis: An exact diagnosis can be made by cystogram. A careful urinary history may give a lead; however, some cases do not complain of urinary symptoms. Again, some cases develop acute urinary retention. Intermittency is a valuable sign when elicited. Some patients will void that urine in the abdominal portion of the bladder, and then by applying pressure over the scrotal mass, will again void an appreciable amount. This is also spoken of as two-stage urination.

Cystoscopy may be helpful. However, if there is a much enlarged prostate, as in the case herein reported, it may be impossible to see the bladder or diverticular opening leading to the scrotum. Pressure on the scrotal mass often induces the desire to urinate. Residual urine is present in most cases. Hydronephrosis and hydroureter may develop in some due to traction or angulation of the lower ureters.

When an accurate diagnosis has been made, the combined surgical-urological team can plan a surgical approach suitable for both

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hernial repair and resection of the diverticulum. In case of true bladder herniation, replacement of the bladder is ideal, if feasible. One can get into surgical difficulties unless a diagnosis has been made preoperatively. The following case report illustrates this.

CASE REPORT

N. B., white male, age 68, was admitted to the St. Francis Hospital with the chief complaint of not being able to void. He had had difficulty in passing urine for ten years. Lately he had been using combined abdominal and scrotal pressure as an aid in voiding. The significance of this was overlooked in making a final diagnosis. There was burning and dribbling on urination. Anorexia and constipation had been present for the week before admission to the hospital.

Past history and family history were irrelevant. On general physical examination the head and neck were normal, as were eyes, ears, nose and throat. There were a few moist, crepitant rales at the lung bases. The heart revealed a blowing systolic murmur at the base and apex, but was not enlarged. The abdomen was pendulous and there was dullness to percussion to the right of the umbilicus which was felt to be liver.

On examination of the external genitalia there was a doughy mass in the right scrotal sac which did not give an impulse on coughing and was thought to be a small hydrocele. Rectal examination revealed a Grade III benign overgrowth of the prostate. Extremities were normal; neurological findings were normal.

Laboratory Findings. Blood count and blood urea within normal limits. Urinalysis—no sugar, no albumin, many WBC.

Intern's Impression: 1. Benign overgrowth of prostate. 2. Oliguria, with impending congestive failure.

Chest X-Ray: Heart and lungs within normal limits.

Excretory Urogram showed prompt appearance of the dye in both kidneys in five minutes. There was slight bilateral hydroureter. A 60 minute film showed the bladder incompletely filled and irregular in outline on its right lateral aspect. (This suggested some intrinsic or extrinsic factor responsible for drawing the bladder to the right. Tumor was thought of, but in a lesion of this extent there would have been a history of hematuria.) Both ureters in their lower one-third were displaced to the right.

Cystoscopy revealed a normal bladder mucosa, but due to the prostatic enlargement the ureteral orifices were not visualized, nor was the mucosal surface of that part of the bladder wall seen that appeared displaced to the right in the excretory films. It was assumed that this was a local sacculated area consequent to bladder neck obstruction.

A final diagnosis of benign overgrowth of prostate and right hydrocele was made, and operation planned to resect the hydrocele to be followed by electric endoscopic vesical neck resection. After a short period of permanent catheter drainage and urinary tract disinfection, operation was finally carried out.

Operation: The right scrotal sac was opened, and it became immediately apparent that we were not dealing with a hydrocele. A mass presented which was doughy in consistency and easily compressible. The spermatic cord was greatly elongated and the testis appeared small and trophic. A small hernial sac presented contiguous to the cord. Cord and testis were removed while the small hernial sac was resected, and its neck carried upward through the external inguinal ring and sutured under muscle and fascia.

Attention was now directed to the doughy herniation which preoperatively was presumed to be a small hydrocele. As there had been no impulse transmitted to the scrotal mass preoperatively, it was felt that there was no gut present. Careful dissection of the mass revealed bladder muscle. An incision was carried down through the muscle layer, the mucous surface, and through this layer into the lumen of what now appeared to be a bladder diverticulum. There was no urine in the diverticulum. A finger could now be passed through the neck of this structure into the bladder proper until the enlarged prostate could be palpated from its bladder aspect.

As we were not certain that we might be dealing with hernia of the urinary bladder, a transverse suprapubic incision was made, and the bladder opened. It was now possible to invert the diverticulum and push it up through the external ring on into the bladder proper. However, it was apparent that diverticulectomy could be carried out more easily

working in the scrotal area. Consequently, the diverticulum was returned to this area and resected, pursestringing its neck, which in turn was pulled up through the external inguinal ring, inverted, and tied from within the bladder. A large suprapubic tube was inserted and bladder and suprapubic incision closed, followed by repair of the large external ring and final closure of the scrotal incision around a Penrose drain. The prostate was left for subsequent endoscopic vesical neck resection which was carried out uneventfully 18 days later, the patient being discharged from the hospital four days following electric resection of the prostate.

COMMENT

A plea is made for the routine employment of the cystogram in urological diagnosis. The technique is simple, and the information gained is often greater than that derived from cystoscopy. It is the only accurate method of demonstrating scrotal cystocele.

SUMMARY

1. Attention is called to the rarity of diverticulum of the bladder occurring in the scrotum.
2. A personal case report is presented with references to the literature.
3. A plea is made for routine use of the cystogram in urological diagnosis.

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INTESTINAL OBSTRUCTION

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Our Chairman suggested I discuss the problem of intestinal obstruction this evening. This is a large order for the time allotted. Of necessity, this paper shall, therefore, be limited.

The causative factors in obstruction of the bowel may be classified as: (1) mechanical; (2) nervous, (3) vascular.

The most frequently observed causes of intestinal obstruction are due to mechanical agents such as: (1) adhesions; (2) herniae; (3) narrowing of the lumen due to strictures of the intestinal wall either acquired or congenital or obturation of its lumen by a foreign body or compression of the lumen from without; (4) volvulus, (5) intussusception; (6) embryologic defects.

Disturbances of the nervous mechanism may interfere with intestinal motility; these may be paralytic or spastic in nature.

Interruption of the normal blood flow to or from the intestinal tract, such as embolism or thrombosis of the mesenteric vessels will cause intestinal obstruction.

From a pathologic viewpoint there are but two types of obstruction: (1) simple obstruction, presenting interference with the continuity of the bowel only, (2) strangulating obstruction, in which there is evidence of compromise of the blood supply.

The chief complaints of patients with intestinal obstruction are of pain and vomiting, and later of distention. The pain is crampy and intermittent and is described as a "gas pain." The colicky distress may recur frequently or at long intervals, depending on the nature of the obstruction. The vomiting is frequent and copious in small bowel obstruction. Great distention of the abdomen with little or no vomiting usually means that the obstruction is in the colon.

The appearance of the patient early in the course of obstruction often affords no evidence that he is suffering from a serious ailment. The pulse rate, respirations, temperature, and blood pressure are usually normal. Apart from the pain, the vomiting, and the distention, the patient may not appear to be particularly ill. In strangulating obstructions, the pulse may be rapid, shock may be present if the blood loss is great. Irritation of the peritoneum by escaping sanguineous fluid causes the patient to suffer more distress than the patient with simple obstruction.

The most significant physical findings are obtained on auscultation. The first step, therefore, in determining the presence or absence of bowel obstruction is to decide whether intestinal colic is present. The synchronous concurrence of pain and noise (borborygmus) establishes the painful contractions as intestinal colic. Intestinal obstruction of mechanical origin without intestinal colic does not exist. It now only remains to be determined whether the intestinal colic is that of bowel obstruction, enterocolotis, food allergy, or indiscretion. On the basis of such general symptoms as vomiting, distention,

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fever, diarrhea, and the nature of the constitutional symptoms, the differential diagnosis is usually made.

In strangulating obstructions a great number of conditions must be thought of in the differential diagnosis. These conditions include all of the abdominal colics, such as renal and biliary, and the inflammatory diseases such as appendicitis, salpingitis, peritonitis, pancreatic necrosis, or the hemorrhagic lesions such as purpura and hemophilia. Torsion of the various organs, especially ovarian cysts and the testes, must be considered in a differential diagnosis. Typical cases of biliary or renal colic, appendicitis, salpingitis, and ectopic pregnancy, are usually easily identified. Intestinal colic is absent in all of them. In any typical condition, the history, roentgen films, and the general laboratory work will aid materially in arriving at a probable diagnosis.

Delay in diagnosis of obstruction is usually due to lack of appreciation of the fact that simple obstruction of the bowel does not give rise to local physical findings such as tenderness and rigidity. This often leads one to believe that only a trivial condition is present. When it is remembered, however, that simple obstruction of the bowel is the only serious acute lesion which does not give rise to abdominal tenderness, a lack of local physical findings in a patient with abdominal pain, nausea, and vomiting, should make one suspicious of the presence of intestinal obstruction.

It is frequently said that obstipation characterizes intestinal obstruction. The bowel distal to the point of obstruction is, anatomically as well as physiologically, normal. In incomplete obstructions, therefore, gas may continue to be evacuated as long as enemas are given. The expulsion of gas and feces following an enema does not rule out intestinal obstruction Only in complete low obstruction is obstipation present. The employment of catharties in mechanical obstruction is not recommended. Morphine administered prior to the making of a diagnosis is also not recommended.

Once the diagnosis of obstruction is clarified, an attempt should be made to determine whether the obstruction is in the small or large bowel. The next step should ascertain whether the obstruction is complete or incomplete. Finally, an attempt should be made to identify the exact nature of the obstructing agent.

Mortality Rates

Scudder[1], in 1907, reported a mortality rate of 60% in all cases of intestinal obstruction. In 1933, Wangensteen[2] reported a mortality rate of 17%. Nemir[3] reports a mortality rate of 10% for the period 1940-1950. However, the mortality in cases where gangrenous bowel was found at operation was 31%. It is, therefore, evident that early diagnosis and treatment are essential factors in lowering this high mortality rate.

The following case reports may clarify some of the obstacles encountered in diagnosis and treatment.

Case Reports

Case 1. White female, age 28, was admitted to St. Francis Hospital on November 25, 1950, with chief complaint of abdominal pain for two days prior to admission. The pain was colicky at first, but became constant for the twelve hours immediately before admission. Vomiting, increasing in severity, was present for two days. The past history and family history were not significant.

Examination releaved a well nourished white female, acutely ill. The temperature was 100°, pulse 96, and respirations 28. Blood pressure was 118/70. Head, neck, and chest were normal. The abdomen was considerably distended. There was marked tenderness in the right lower abdomen. Peristaltic sounds were markedly diminished. Laboratory studies showed a leukocytosis; all other studies were normal. Diagnosis was made of "acute abdomen," possibly intestinal obstruction.

Laparotomy was performed several hours after admission. Serosanguineous fluid was present in the abdominal cavity. The upper small bowel was distended and edematous. A volvulus was recognized; the involved bowel was gangrenous for a distance of about nine feet. Gangrenous bowel was excised, and end-to-end anastomosis performed. Convalescence was uneventful.

Case 2. White male, age 35, was admitted to St. Francis Hospital on September 26, 1952, with chief complaints of vomiting, ab-

dominal pain, and abdominal distention of three days duration.

Examination revealed a fairly well nourished white male, acutely ill. The temperature was 99°, the pulse, 100, and respirations 22. Blood preessure was 106/78, diastolic. The chest was clear, heart normal. Abdomen was quite distended. There was some tenderness in the lower mid-abdomen. Peristaltic sounds were diminished. Laboratory studies were normal.

X-ray of the chest showed normal appearing heart and lungs. Flat plate of the abdomen showed evidence of a localized distention by gas of the upper small intestinal loops, suggestive of a high level intestinal obstruction.

A laparotomy was performed. Upon opening the abdomen a large quantity of sanguineous fluid was found. About 150 cm. of the lower ileum was gangrenous, and this was excised. Normal small bowel was sutured to cecum. Cultures were positive for B. coli, were chloromycetin sensitive, and also slightly sensitive to aureomycin and terramycin.

Pathologic examination: "Piece of small intestine measuring 144 cm. long. A large portion of the mesentery is attached. The intestine is dark red and obviously in a stage of early gangrene, except at the extremities. Examination of the blood vessels in the mesentery shows them filled with blood, but no obvious thrombosis is encountered. Diagnosis: Gangrene of small intestine due to circulatory disturbance."

Convalescence proceeded uneventfully. This is an example of intestinal infarction without basular obstruction. Experience has shown that besides real intestinal infarction due to thrombosis or embolism, another type of so-called intestinal infarction occurs in which no vascular obstruction is present. According to Thorek[4] this class of cases often is perplexing, taxing the surgeon's diagnostic and therapeutic ability to the utmost.

Case 3. Colored male child, age 2, was admitted to St. Francis Hospital on January 13, 1950, with chief complaints of vomiting, and a colicky abdominal pain, of three days duration.

The positive physical signs were limited to the abdomen. A generalized abdominal distention was present. Peristaltic sounds were hyperactive. Dehydration was evident. Temperature was 99.6°, pulse 110, and respirations, 28.

Laboratory studies revealed a WBC of 9,800, with 54% neutrophiles, 44% lymphocytes, and 2% monocytes. RBC was 3,200,000; hemoglobin 7.5 grams. No sickle cells were found. Serum protein was 5.8 gms. Urine analysis showed a trace of albumin. Stool cultures were negative for typhoid-dysentery group of bacteria. Stools were also negative for occult blood.

Roentgen-ray examination of the chest was within normal limits. Flat plate of the abdomen showed marked distention of the loops of both small and large bowels.

On January 17, 1950, a laparotomy was performed. A congenital stenosis of the terminal ileum was found. A short circuiting anastomosis was performed. The abdomen was entirely normal five days following surgery.

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RATIONAL USE OF HORMONES IN PREGNANCY

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Before a physician administers hormones to a patient, whether pregnant or not, he should know the action and end-result produced by the hormone involved. This statement cannot be over-emphasized because many doctors prescribe hormones indiscriminately without understanding the reason behind their use.

It should be remembered that no new hormones are produced in pregnancy, with the possible exception of chorionic gonadotrophin. There is, however, an increase in the amount of the pre-existing ones present in the body.

The steroid or sex hormones are of more importance at present in pregnancy than any others, so most of this discussion will be limited to their action.

Space does not permit us to cover the entire use of the endocrines in pregnancy, but

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it will suffice to say where endocrine disorders complicate pregnancy the necessary hormones are administered. We shall briefly touch some of the latest treatment in ductless gland therapy.

To understand the action of hormones in pregnancy it would be wise to review the products necessary for conception to occur. The pituitary gland secretes the follicular stimulating hormone, which in turn stimulates estrogen production by the ovary. The estrogen acts on the uterus by causing hypertrophy and endometrial proliferation. The pituitary gland then secretes its second hormone, lutenizing hormone, which in turn causes ovulation and the production of progesterone by the corpus luteum. Progesterone acts on the endometrium to make it secretory in type, extremely vascular, and ready for implantation of the fertilized ovum. Thus, these four basic hormones are necessary for the pregnancy to commence, and they have definite uses in pregnancy, as we shall see later.

Once pregnancy has occurred there is a definite increase in estrogen and progesterone, which is produced by the ovary initially. At approximately three months gestation the function of estrogen and progesterone formation is assumed by the placenta. It is at this critical point where the ovary ceases to produce the hormones and the placenta has not yet taken on this function that most spontaneous abortions occur.

For this reason the administration of estrogen and progesterone has been advocated in threatened and habitual abortions. Progesterone was the first to be used in the treatment of abortions, but unless given in relatively large doses it proved to be ineffective. Economically, large doses made it impossible for many patients to receive this hormone, so that its value is limited.

A search was then instituted for a cheaper and as effective hormone to prevent abortion, and stilbesterol was thought to meet these criteria. This conclusion was based on the fact that there was a continuing rise in estrogen during pregnancy, along with progesterone, and a fall before abortions occurred. The theory was then postulated that estrogen was necessary for progesterone formation by the placenta. Diethylstilbesterol was cheap and easy to administer, so was proposed as the estrogen of choice to give in preventing abortions. An increased weekly dosage schedule was worked out which would theoretically prevent abortions based on a progesterone deficiency.

The results of this form of treatment are paradoxical, but on the whole it may be said from all investigative work that these hormones offer very little in foetal salvage. Overenthusiasm by certain researchers have caused these hormones to be widely used, but if we look back on the cases involved I am sure very few have been aided by this form of therapy.

Chorionic gonadotrophin is another hormone produced by the placenta and may be the one new hormone produced in pregnancy. This hormone gives the positive biological tests for pregnancy, and is usually in high enough concentration to give a positive reaction two weeks after the last menstrual period. The hormone reaches its greatest concentration about the sixtieth day and then subsides rapidly in a normal pregnancy. Occasionally it is so low that a negative A-Z test would be produced within the last week of a normal pregnancy.

The induction of labor is another use of hormone therapy in pregnancy. Formerly, pituitrin, the oxytoxic derivation of the posterior portion of the pituitary gland, was used. This hormone, however, produced some serious side reactions, so that it was used sparingly. Then an oxytoxic principle was produced which had very slight reactions: this was pitocin. This hormone caused no abnormal rise in blood pressure and its action was well regulated in therapeutic doses. In the past few years, this drug has been administered intravenously by drip method in dextrose solution to induce labor. Its action is quicker, better maintained, and more easily controlled. Pitocin may be given to induce labor when the necessary criteria are present or in primary uterine inertia to stimulate labor.

In preventing lactation in mothers who do not nurse, the sex hormones may have been used rather frequently. Estrogen, more commonly in form of diethylstilbesterol, and androgen may be given for suppression of lactation. Both hormones are supposed to inhibit the production of the lactation hormone,

prolactin, and thus prevent milk formation. The danger in administering estrogens is that engorgement may occur after therapy has been discontinued and occasionally profuse bleeding may occur four to six weeks later. Androgen therapy is more rational, but usually must be given for several days to be effective.

Whether hormones aid materially in preventing lactation and breast engorgement is still a debatable question. Many clinicians feel that satisfactory control may be had without the use of hormones.

Lately the use of hormones in treating eclampsia has been advocated on the basis that there is a dimunition of estrogen and progesterone with a corresponding increase in chorionic gonadotrophin. Other studies have not verified this condition, so the question of the value of hormones in the treatment of eclampsia is still unsolved.

Diabetes is another condition which has shown a deficiency of both estrogen and progesterone so that these hormones have been prescribed in this disease. Other investigators have achieved as good or better results without using hormones, so again, there is a controversy concerning hormone therapy in diabetes. Probably excellent results can be obtained with good medical management without resorting to hormones except, of course, insulin.

The thyroid hormone has always been used in the treatment of habitual abortion but its exact mechanism is not yet understood. Certainly, patients with a subnormal or low normal basal metabolism rate should be placed on thyroid therapy during pregnancy. Many physicians give it routinely in their prenatal care, but it must be remembered that the thyroid gland hypertrophies and the basal metabolism rate is raised 25-30% during pregnancy. Low dosage is the rule for thyroid during pregnancy; between one half to two grains per day being sufficient.

Hyperthyroidism may be treated by propylthiouracil or radioactive iodine up to the second month of pregnancy. After this time thyroidectomy is preferable, and should be performed before the sixth month.

The use of ACTH or cortisone in pregnancy has no place at the present time. It has been used experimentally in the treatment of eclampsia, which seems paradoxical, but the results have been unsatisfactory.

On the whole, there is very little use for hormone therapy in pregnancy that has absolute value. However, with the continued improvement and knowledge in endocrinology more rational hormone therapy will be recognized and prescribed. I would like to quote one of the outstanding obstetricians in the country on the use of hormones in pregnancy (Waters): "The status of endocrine therapy in obstetrics is highly controversial, with the greatest confusion at the highest levels."

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ALCOHOLISM AND THE GENERAL PRACTITIONER*

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Alcoholism presents a serious challenge to the medical profession. People who are ill and troubled are going to try to get well even if they have to create their own resources and devices to do so. Nowhere is this more apparent than in the treatment of alcoholism. Although this is essentially a medical problem, progress in treatment has developed largely from non-medical people.

Unfortunately, it has been assumed that there are only two kinds of alcoholics. There is the group found in every community—the so-called "skid-row drunk." At the other end of the spectrum is the psychotic drunk who is so greatly in need of protective custodial care. Quite forgotten are the large number in between who are capable of rehabilitation to their proper places in society, in their occupations, and in their community. Those are the people who are most responsive to therapy and most likely to inactivate their alcoholism if medical and other approaches are properly coordinated.

I practice in a town of six thousand and the ratio of alcoholics is as high there as in the big cities. There are farmer alcoholics, doctor alcoholics, engineer alcoholics, lawyer alcoholics, clerical alcoholics—whether they be Protestant, Catholic, or Jew. There are alco-

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holics everywhere, of all races, creeds, colors, and ethnic origins.

There is no geographical or cultural immunity. I heard one of the group talking at dinner before this meeting about seeing alcoholics in India. I've seen them on small islands, where the ingenuity required for the production of alcohol would challenge Einstein, but they made alcohol. This is not a cultural problem; it is not an intellectual problom; it is not a moral problem, per se; it is not a physical problem; it is not an allergic problem; it is not a chemical problem. It is the problem of the total man, in the full meaning of this expression.

Physicians recognize that the acute alcoholic is physiologically sick and that the disordered functions must be treated the same as any other poisoning. However, one must avoid the creation of new problems. I speak of the ill-advised use of barbiturates, narcotics, and other drugs which may begin a new chain of events to plague an already discomfited individual.

Medical authority carries with it a great deal of weight and even our words are extremely important. I saw a man who had been cared for by an excellent psychiatrist and who had abstained for a year and a half. The psychiatrist said: "You're rid of your neurotic problems. I think it would be all right for you to take a short snort before dinner." So, of course, the fellow did. After all, he wanted to, and now that he had the authority, why shouldn't he? So, in three weeks, he lost one job, one wife, and three sons.

I would like to warn about using the word "cure" in this disease. Cure is a desirable objective, but I do not think we are anywhere near where we can speak of "curing" alcoholism. Rather should we talk of inactivation, for irrespective of the time away from alcohol, no matter how nicely people get reintegrated maritally, domestically, economically, socially, and spiritually, they still can not take a single drink of liquor if they are alcoholics.

Meetings of medical groups such as this, are the places to discuss alcoholism. The people who need education are not the judges, they are not the social workers, not the fellows in legislature who write the tax laws and find out the amount of money that has to be appropriated, not the bartenders, nor the motor vehicle commissioners. They are all aware of the problem. They see it; they live with it. So they come to us, who are supposed to lead in helping the sick and the wounded. They come to us to remind us of our responsibility. Now, is it not paradoxical that such a thing should happen? I think the people who need education are the practicing physicians and the educators in the medical schools.

In talking to a group of resident physicians not long ago I said to them: "What are they teaching you about alcoholism now?" "Well," they said, "paraldehyde is all right, and antabuse is pretty good." And this is 1953!

One cannot intelligently discuss the problem drinker without mentioning the effect that Alcoholics Anonymous has had on our thinking and attitude in this disease. A. A. has given vitality and sustenance to a heretofore depraved attitude toward the alcoholic. This fellowship has made a singular contribution in our medical, social, religious and philosophical attitude in the handling and treatment of this illness. It is impossible to estimate in numbers the patients who have found recovery in the fellowship of A. A. Moreover, the effect of A. A. philosophy in thinking has gone far beyond the realm of the immediate patient. It has influenced thinking in a community, the employer, the psychiatrist, the institutional head, the police, and agencies of government. There is no force nor element of therapy existing today that has not been implemented by the philosophy of A. A. in the management of the problem drinker.

I want to close by asking you to please give this very important group of your patients some thought. You'll find it rewarding in winning their respect and confidence. Economically, you'll find it rewarding, but you'll also find that you're fulfilling the major objective to which you dedicated yourself when you chose a career in medicine.

Many cases of pulmonary tuberculosis are either disregarded by the patient or are symptomatically latent, and even after pathological examination it is not always possible to say whether we are dealing with reinfection or reactivation. George Blumer, M.D., Conn. State Med. J., May, 1952.

NEW PSYCHIATRIC DIAGNOSTIC NOMENCLATURE*

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Because of the polyglot of diagnostic labels and systems effectively blocking communication anad collection of medical statistics, the psychiatric nomenclature has been recently revised. In 1948 at least three nomenclatures (Standard, Armed Forces, and Veterans Administration) were in use, and none of them fell accurately into line with the International Statistical Classification. Many teaching centers, clinics and hospitals had modified one or all of the above to suit its own purposes.

This revision of psychiatric nomenclature provides a classification system consistent with the concepts of modern psychiatry and neurology. It is primarily descriptive in nature and provides for inclusion of new ideas without radical revision of the system of diagnosis. It limits itself to the classification of the disturbances of mental functioning and does not include primary neurological diagnoses. These conditions are diagnosed separately, whether or not a mental disturbance is associated with them.

The following is an outline form of the revised diagnostic system.

I. Disorders Caused by or Associated with Impairment of Brain Tissue Function

This snydrome of organic brain disorder is due to impairment of brain tissue function from any cause. These disorders are separated into acute and chronic depending upon the nature of the pathological condition in the brain. In acute disorders the pathological changes are reversible in contradistinction to the irreversible changes in chronic disorders.

A. Acute Brain Disorders

These are the organic brain syndromes from which the patient recovers. They are sub-classified according to the cause of the impairment of brain tissue function, i.e., Acute Brain Syndrome associated with systemic infection, drug or poison intoxication, circulatory disturbance, trauma, etc.

B. Chronic Brain Disorders

The chronic organic brain syndromes result from relatively permanent, irreversible impairment of brain tissue function. They are subclassified according to the cause of the impairment, i.e., Chronic Brain Syndrome associated with central nervous system syphilis, cerebral arteriosclerosis, senile brain disease, convulsive disorder, etc.

II. Disorders of Psychogenic Origin or Without Clearly Defined Physical Cause or Structural Change in the Brain

A. Psychotic Disorders

Psychoses due to psychogenic causes without clearly defined physical cause or structural change in the brain are included under this heading.

1. Involutional psychotic reaction
2. Affective reactions
3. Schizophrenic reactions
4. Paranoid reactions
5. Psychotic reaction without clearly defined structural changes, other than above

B. Psychophysiologic Autonomic and Visceral Disorders

This term is preferred to "psychosomatic disorders" since the latter term refers to a mind-body relationship rather than to specific conditions. It includes the "organ neuroses" and cases formerly classified as "cardiac neurosis," "gastric neurosis" and so forth. They are sub-classified according to the system or systems involved, i.e., psychophysiologic skin reaction, respiratory reaction, gastro-intestinal reaction, genito-urinary reaction, etc.

C. Psychoneurotic Disorders

The common denominator of these disorders is "anxiety," either consciously felt or unconsciously controlled by the utilization of various psychological defense mechanisms.

1. Anxiety reaction—The term is synonomous with the former term "anxiety state." It is characterized by diffuse anxiety not displaced to definite situations or objects as in the case of phobic reactions.
2. Dissociative reaction—Formerly this

*General Staff Meeting, St. Francis Hospital, March 24, 1953.

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reaction has been classified as a type of "conversion hysteria." It represents a gross personality disorganization as seen in cases of fugue states, amnesias, and so forth.

3. Conversion reaction—The term "conversion reaction" is synonymous with "conversion hysteria." Instead of being experienced consciously, the anxiety is converted into functional symptoms in organs or parts of the body usually under voluntary control. Paralysis (paresis, aphonia, monoplegia and hemiplegia) of psycogenic origin are examples of this phenomena.
4. Obsessive-compulsive reaction — In this reaction the "anxiety" is unconsciously controlled by repetitive ideas or acts. It includes many cases formerly classified as "psychosthenia."
5. Depressive reaction—This term is synonymous with reactive depression. The reaction is precipitated by a current situation to which the person reacts with depression. It is to be differentiated from normal grief.
6. Psycho-neurotic reaction, others—under this classification will come all reactions considered psycho-neurotic and not classified elsewhere.

D. Personality Disorders

These disorders are manifested by a faulty life-long pattern of action or behavior rather than by mental or emotional symptoms.

1. Personality pattern disturbances—
   a. inadequate personality
   b. schizoid personality
   c. cyclothymic personality
   d. paranoid personality
2. Personality trait disturbance—
   a. emotionally unstable personality
   b. passive-aggressive personality
   c. compulsive personality
   d. personality trait disturbances, others
3. Sociopathic personality disturbance—
   a. antisocial reaction
   b. dissocial reaction
   c. sexual deviation
   d. addiction
      1. alcoholism
      2. drug addiction
4. Transient situational personality disorders—
   a. transient situational personality disturbance
   b. gross stress reaction
   c. adult situational reaction
   d. adjustment reaction of infancy
   e. adjustment reaction of childhood
   f. adjustment reaction of adolescence
   g. adjustment reaction of late life

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PSYCHOTHERAPY*

WILLIAM A. BYRNE, M. D.,**
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Psychotherapy can be considered the art of treating mental diseases or emotional disorders by any measure, physical or mental, that favorably influences the mind or psyche. In my brief discussion, the physical or somatic forms of treatment will not be discussed.

Mental measures may be considered either symptomatic or causal in nature. Symptomatic therapy, also spoken of as short term therapy, directive therapy, reeducation, supportive, etc., is directed at removal of symptoms. Causal therapy, also known as long term therapy and insight therapy, non-directive therapy, is directed toward removing the cause of the symptom. Psychoanalysis is probably the most refined form of causal therapy.

The therapist must decide which form or forms of treatment are best suited to the individual case. Not every patient is suited for insight therapy, and some may even be harmed by insight that was forced upon them prematurely.

Both forms of therapy have certain factors in common such as:

1. Emotional support. Every patient hopes for relief and the opportunity to satisfy his regressive needs for dependence has a therapeutic effect.

2. Intellectual support. The opportunity to talk about his problems in a sympathetic atmosphere objectively helps to clarify the problem in his own mind.

*General Staff Meeting, St. Francis Hospital, March 24, 1953.

**Visiting Psychiatrist, St. Francis Hospital.

3. Emotional discharge. The patient is given a chance to express his emotions and allows the patient to see his problem more objectively. Other methods common to supportive therapy are reassurance and support of the patient's attempt at self-justification.

I have mentioned briefly the chief forms of psychotherapy and some common factors and some of the goals. Now a word about the therapist. The practice of professional psychotherapy is an art based upon principles of sympathy and understanding that makes use of specialized techniques not available to the ordinary layman. It is necessary that the therapist like people and wish to help them; that he be able to maintain a certain reserve or distance from the patient so he can be objective. He must be able to project himself into the "life history and personality of the patient." A common means of communication is necessary and the therapist is better equipped if he has some understanding of the social structure in which the patient is functioning.

Now for the patient. I think we ought to recognize that psychotherapy will not favorably influence all patients. The ideal patient is one whose symptoms cause enough discomfort that the patient himself wishes to get rid of the symptoms. It is not enough that his wife or mother or the law sends him to the therapist. Also, the therapist is not a cultist, and a person who comes because it is fashionable is not likely to be helped much.

The general practitioner—what kind of psychotherapy can he practice? Does the type of work he is called upon to do from day to day require a knowledge of psychotherapy and its value? There can be no denying this regardless of the term one wishes to apply—some call it a bedside manner, others refer to the "kindly family doctor." Osler urged the lavishing of doses of optimism—all are referring to what we speak of today as psychotherapy. As I have mentioned, there are varying degrees and types of psychotherapy. In many instances the family physician is well suited to provide many of the factors which will see the patient through his illness and on the way to recovery. However, there still remains the patient whose illness requires more than the symptomatic or supportive therapy who will require the services of the therapist who must employ more specialized techniques. Whether the patient avails himself of these services will to a great extent depend on the medical profession itself. How well it is understood and how much courage can be given the patient to seek and use the available help will depend on the recognition, acceptance, and interpretation of this therapy to the patient by the physician in general medicine.

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THE PHYSICIAN'S ROLE IN MARITAL PROBLEMS*

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Wilmington, Del.

Like an army in which the thin edge of the fighting forces takes the greatest punishment, so too, does the general practitioner face the heaviest load and carry the burden for all of medicine. Especially in the field of problems relevant and related to marriage difficulties can he perform his greatest services.

The most complex and difficult type of interpersonal adjustment may be considered to be that of marriage. It is also the form of human relationship that is productive of the deepest gratifications in the physical, emotional, intellectual, and spiritual spheres, or it can be the most destructive kind of relationship producing, when it goes awry, neuroses, psychoses, psychosomatic disorders, and divorce, to say nothing of disturbed and disorganized children.

The physician by virtue of his intimate, personal type of service to and for his patients is in the position to do the most in many ways. He may serve as a kindly, understanding, parental-type of figure to those who are contemplating marriage by helping them to understand the need for a complete evaluation of themselves during the courtship, when each prospective bride and bridegroom must sit down and try to understand each other from the point of view of what each has done in the past, is doing now, and what each can be expected to do in the future.

The family doctor may, by his objective understanding of the mature love relation-

*General Staff Meeting, St. Francis Hospital, March 24, 1953.
**Visiting Psychiatrist, St. Francis Hospital.

ship, be able to help those planning to marry and those already wed and in trouble. He can provide them with an understanding of the physical, sensual, organic-instinctual needs of both male and female. Progressing from this, he will be able to help them organize the tender, affectionate, romantic relationship so necessary in marriage. He will show them the need for a real friendship with the partner and how to develop the characteristics of dependability, understanding, and acceptance of each other on a mature basis. Finally, he will help them to achieve a satisfactory intellectual or sublimated type of relationship with much emphasis on the value of a spiritual outlook and approach to the many never-ceasing problems which arise in the marital state.

All this can be done if the physician himself, and who else, by training, preference, experience, and example can do it better, can provide his patients with the understanding and means whereby they can become aware of measures by which they can build for themselves, the marital partner, and their children, the greatest degree of personal security. This means that the family doctor must use every opportunity, when it is offered, to provide an understanding of the value of a healthy body, a happy home, a means whereby a livelihood can be earned or useful work done, an adequate number of real friends, and a spiritual outlook and aspiration.

NO TRUCE WITH TB

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New York, N. Y.

It was Saturday afternoon on Okinawa, that war-famed island in the far Pacific. The month was February 1952. In the auditorium of the United States Army Hospital there were gathered many Okinawans and Americans who were interested in the control of tuberculosis among the island population as well as in the United States troops who were in contact with them. Even in this far-away spot there was excitement over news that had made the headlines of the New York papers only a few days before. Science had discovered a new pill which made bed-ridden tuberculosis patients feel "so simply wonderful" that they were "dancing in the corridors." Since that day more than a year has passed and some of those who danced are dead.

What, then, is the place of drugs, the old and the new, in the treatment of tuberculosis and what is the effect of this "chemotherapy" on the tuberculosis campaign?

There is no doubt, after a seven-year trial, that certain drugs are very helpful in treating tuberculosis. So, for the first time in history, we have drug treatment to add to the time-tried but never really satisfactory formula of "rest, fresh air, and good food," and the later treatment by pneumothorax, pneumoperitoneum, thoracoplasty, and surgical removal. By February, 1952 it had been determined that the most effective drug treatment was a combination of streptomycin and para-aminosalicylic acid (PAS). Then came the exciting new drug which is now officially named "isoniazid" but may be referred to by at least half a dozen other trade names. As intimated above, isoniazid has not lived up to the original expectations, but by itself it is a better drug than PAS and it is hoped that the combination of streptomycin and the pleasant isoniazid will be as good or better than streptomycin plus the rather unpleasant PAS. Time and much careful study will tell.

But there is as yet no evidence that drug treatment can replace bed rest and surgery. It is only an extraordinarily useful addition to older methods of treatment. However, it may shorten the period of bed rest and sanatorium care, and it may improve the condition of many patients sufficiently to warrant an operation previously considered too dangerous.

But there is no hope that chemotherapy is so effective it will wipe out tuberculosis in a few years' time and so make other efforts to control tuberculosis unnecessary.

It is true that death rates are dropping rapidly in most cities in the United States, but it is also true that in many cities the drop has not continued when federal or local health organizations have stopped their x-ray surveys and other control measures. And it is

*President, American Trudeau Society.

alarmingly true that tuberculosis is still the first cause of death from disease in young adults and that there is no decrease in the number of active cases discovered in the older males.

Therefore, there must be no slackening in our efforts to fight tuberculosis. We must still conduct x-ray surveys to find early or asymptomatic disease; provide facilities for perhaps yearly x-ray checks of large portions of the population; continue the campaign to have chest x-rays of all hospital admissions and all hospital personnel; continue the support of research workers who are studying fundamental scientific problems, and help provide special instruction in lung disease for medical students and non-specializing doctors. These and many other problems will need our constant attention.

But someone has to provide the money which makes such studies possible. The Christmas Seal sales have, through the years, provided the life blood for the volunteer citizens campaign against tuberculosis. At the present time in the state of Delaware Christmas Seal funds of the Delaware Anti-Tuberculosis Society have made possible their Statewide Chest X-ray Survey. It is expected that more than 40,000 Christmas Seal dollars will be spent on this Survey alone. The other activities of the Delaware Anti-Tuberculosis Society have not been curtailed. The Society therefore hopes to have a very successful Seal sale this year. The Seal sale, which is the 47th annual sale, opens on Monday, November 16th.

NEW LEGISLATION

Three Bills which directly affect the medical profession were passed at the last Legislature.

One of these bills doubled the license fees for all occupations, including that of physicians. This Bill appears as Chapter 346, Volume 49, Laws of Delaware, beginning on page 723. Approved by Governor 7/10/53. Copies of the other two Bills are printed herewith.

House Bill No. 387 With House Amendment No. 1 and House Amendment No. 2

An Act to Amend Title 11, Delaware Code of 1953 entitled "Crimes and Criminal Procedure" by providing for reports in Cases of Epilepsy.

Be it enacted by the General Assembly of the State of Delaware:

Section 1. Chapter 1, Title 11, Delaware Code of 1953 is amended by adding a new section thereto as follows:

108. *Reports of epilepsy; limitation on use*

Every physician attending or treating epilepsy shall report within one week to the Department of Motor Vehicles the names, ages and addresses of all persons treated as cases of epilepsy.

The reports shall be for the information of the Department of Motor Vehicles in enforcing the provisions of the Motor Vehicle Law. Said reports shall be kept confidential and used solely for the purpose of determining the eligibility of any person to operate a motor vehicle on the highways of this State.

"A physician failing to make such a report shall be fined not less than Five Dollars ($5.00), nor more than Fifty Dollars ($50.00) and costs for each such report he fails to make."

This Bill appears as Chapter 234, Volume 49, Laws of Delaware, beginning on page 439. Approved by Governor 7/1/53.

House Bill No. 392 With House Amendment No. 1

An Act to Amend Titles 11, Delaware Code of 1953, entitled "Crimes and Criminal Procedure" by providing for reports of treatment of wounds caused by firearms.

Be It Enacted By The General Assembly of The State of Delaware:

Section 1. Chapter 1, Title 11, Delaware Code of 1953 is amended by adding a new section thereto as follows:

107. *Reports of treatment of wounds caused by firearms*

Every physician attending or treating a case of bullet wounds, gunshot wounds, powder burn, or other injury arising from or caused by the discharge of a gun, pistol, or other firearm, or whenever such case is treated in a hospital, sanitarium or other institution, the manager, superintendent or other person in charge shall report such case at once to the police authorities of the city or town where such physician, hospital, sanitarium or institution is located or to the State Police. The provisions of this section shall not apply to such wounds, burns or injuries received by a member of the armed forces of the United States or the State of Delaware while engaged in the actual performance of duty.

Whoever fails to make such report shall be fined not less than $25.

This Bill appears as Chapter 235, Volume 49, Laws of Delaware, beginning on page 440. Approved by Governor 7/1/53.

+ Editorials +

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VOL. 25 NOVEMBER, 1953 NO. 11

The 1953 Meeting

The 164th Annual Session of the Medical Society of Delaware was held at the Hotel DuPont, Wilmington, October 12-14, 1953, President Victor D. Washburn, presiding.

A meeting of the Council was held in Wilmington on September 28th, which passed on many routine matters, thus making it possible for the meeting of the House of Delegates to proceed more quickly and more efficiently. The most important items considered had to deal with legislation, passed by the last Legislature, affecting the medical profession. The full transactions will be printed in the December issue of THE JOURNAL.

The scientific meetings proceeded exactly as printed in the July JOURNAL. These papers were all of a high order and were well received and adequately discussed.

The elections for the year 1954 resulted as follows:

President, Hewitt W. Smith ..... Harrington
President-elect, Lewis B. Flinn ..... Wilmington
Vice-President, Glenn M. VanValkenburgh Georgetown
Secretary, Norman L. Cannon ..... Wilmington
Treasurer, Charles Levy ..... Wilmington
Rep. to D.A.M., W. Oscar LaMotte .... Wilmington

The Woman's Auxiliary met at the same time at the Delaware Academy of Medicine, under the Presidency of Mrs. Willard F. Preston, of Wilmington. The following officers for 1953-54 were elected and installed:

President, Mrs. Allan R. Crutchley ... Middletown
President-elect, Mrs. Gerald A. Beatty Wilmington
Vice-President, Mrs. Glenn M. Van Valkenburgh ..... Georgetown
Secretary, Mrs. I. Lewis Chipman, Jr., Wilmington
Treasurer, Mrs. Lawrence L. Fitchett .... Milford

The social events of the Society and the Auxiliary were held according to schedule, and were enjoyed by large audiences at each. The main event was the reception and dinner on October 13th, followed by a very interesting address by Dr. Thomas H. Alphin, Assistant Director of the AMA's Washington office, on the workings of that office.

The technical exhibits were all good, and again reacted a new high for income. The Society is grateful to them for their financial assistance to our meeting. Ours is a small Society and an occasional comparison with a large one is illuminating. The Pennsylvania Society held their 103rd session at Harrisburg, September 21-24, 1953. We give below the registration figures from our meeting and theirs:

1953	DELAWARE	PENNA.
Members	161	1533
Guests, Visitors	53	633
Internes, Students	8	114
Exhibitors	48	351
Woman's Auxiliary	104	352
Total	374	2983
Membership	(1953) 348	(1950) 11,012
% Registered	46.2	13.9

We were informed a couple of years ago that, throughout the U. S., the average state medical meeting showed 30-35% of their membership in attendance. We believe this figure is much too high.

So passes into history the 1953 Session. Now let us turn our faces towards Dover, October 11-13, 1954, and make the next Session an even better one.

MISCELLANEOUS

What Can Happen in 20 Years

I saw an interesting article by Paul L. Martin, chief of the Washington Bureau of the Gannett newspapers, in the October issue of the *American Mercury*. The facts he revealed certainly set a person to thinking. His article deals with government spending during the 20 years just ended. Here is the record:

In those 20 years, the government spent more than $775,000,000,000 and ran up a net deficit of more than $239,000,000,000. In other words, it spent almost half again as much as it was able to collect, despite ever-increasing taxes.

At the end of fiscal 1933, the national debt amounted to a fraction less than $180 for each American. Now the figure is above $2,000.

In 1933, a typical family with a $4,000 a year income paid $44 in federal income taxes —now it must pay close to $500.

In the last fiscal year, tax collections were 2,100 per cent greater than in 1933.

Read those figures again. Then answer this question: How long can any nation stand such a trend without going bankrupt?

AMA Secretary's Letter, No. 271,
October 30, 1953

Today's Health Wins Two Awards

Today's Health, published by the A.M.A., recently won two awards in the fourth annual magazine show of the American Institute of Graphic Arts in New York. Ninety-two layouts were selected for awards and exhibition from some 2,000 entries.

This was the first time since 1951 that Today's Health had entered the A.I.G.A. show, the most important magazine show in this hemisphere. It also won two awards at that time.

One of the winning layouts, designed by Artist Charles Turzak, was for the article, "How to Read Science Stores." Written by Patricia Jenkins, assistant managing editor of Today's Health, the article was published in the May issue, and is being reprinted in a handbook for college science teachers.

AMA Secretary's Letter No. 271,
October 30, 1952

BOOK REVIEWS

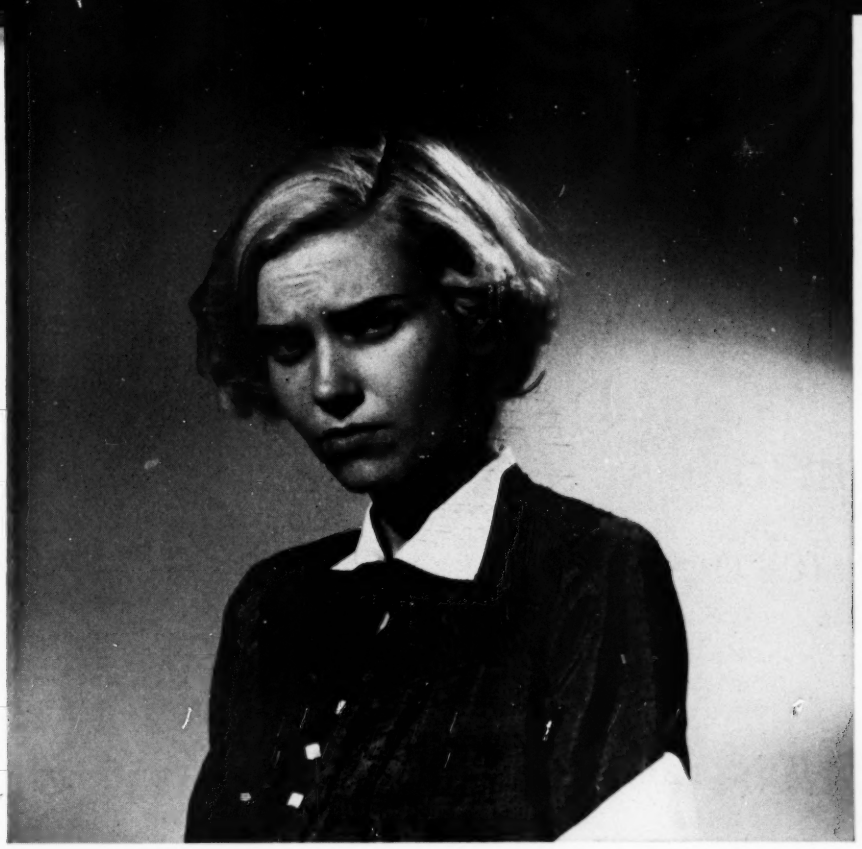
Diseases of the Heart and Arteries: Antomical and Functional Details of the Circulation: Treatment. By George R. Herrmann, M.D., Professor of Medicine, University of Texas. 4th ed. Pp. 652, with 219 illus. Cloth. Price, $12.50. St. Louis: C. V. Mosby Company, 1952.

The first edition of this book, entitled "Synopsis of Diseases of the Heart and Arteries," appeared during your reviewer's first year in practice; one copy on his desk and another on his bedside table attest its usefulness as a reference volume. The fourth edition has grown to a point where it no longer claims to be a synopsis, in which class it was outstanding, but another of a large number of textbooks on the subject. Dr. Herrmann's masterful pedagogy is evident on each page; material is present that is not readily available elsewhere. For these reasons alone, any physician with more than a superficial interest in heart disease should be familiar with the book. It cannot be recommended to an individual as his *only* text on the subject, because there are other better balanced books available.

Clinical Diagnosis By Laboratory Methods —A Working Manual of Clinical Pathology. By James Campbell Todd, M.D., Late Professor of Clinical Pathology, University of Colorado; Arthur Hawley Sanford, M.D., Emeritus Professor of Clinical Pathology, The Mayo Foundation, University of Minnesota; Benjamin B. Wells, M.D., Professor of Medicine, University of Arkansas. School of Medicine. 12th Edition. Pg. 998, with 946 illustrations, 197 in color, on 43 figures. Cloth. Price, $8.50. Philadelphia: W. B. Saunders Company, 1953.

This standard reliable text has added a new co-author, Dr. Wells, a name well known in the field of pathology. The twelfth edition follows the general pattern of the previous fine complete revision with a few necessary additions to help keep it up to date.

As in previous editions this book serves an ideal purpose for the medical student and the physician but is less serviceable for the medical technician or general laboratory, although no laboratory should dare be caught without this volume on its reference shelf.



Various factors during pregnancy (intestinal displacement, atony, inactivity) make it virtually impossible for most women to go through the gestation period without constipation.

CONSTIPATION IN PREGNANCY:

Satisfactorily controlled with Metamucil®

Metamucil, with its physiologic principles of "smoothage" and "normohydration," is well tolerated for pregnancy constipation. This bland vegetable colloid may be used throughout the entire nine-month period without fear of forming a "habit" and without irritation to the mucosa.

Greenhill[1] suggests that Metamucil be given every other night. He also recommends that Metamucil be given in conjunction with a proper diet, during the lying-in period of the puerperium.

Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

1. Greenhill, J. P.: Principles and Practice of Obstetrics, ed. 10, Philadelphia, W. B. Saunders Company, 1951, pp. 103-104; 311; 332.

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1. Frost, L. H., and Jackson, R. L.: J. Pediat. 39: 585-592, 1951.

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